

Idaho 6th Grade Direct Mathematics Assessment

2004 6th GRADE MAIN RANGEFINDER

3

Effective Mathematical Vocabulary, use of Symbols and Communication Skills

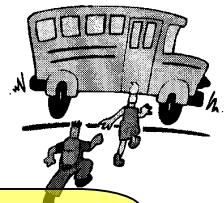
Performing at Grade Level

It is important that you show or explain how you solved the problems on this assessment. If you use a calculator, show how you set up the math.

1. The sixth grade class of Idaho Middle School is taking a 110-mile field trip to see Grizzly National Park.

- a. There are 74 students and each bus holds 22 students. How many buses will be needed for the trip? Show or explain how you found your answer.

$$22 \overline{)74} \quad \begin{array}{l} 3+1=4 \\ \text{buses} \\ \hline 6 \\ 6 \\ \hline 8 \\ 8=1 \end{array}$$



Effective Problem-Solving Strategies

- b. The Grizzly Big-Screen Theater will cost \$3.00 per student, the Grizzly Education Center will cost \$2.50 per student, and lunch will cost \$4.00 per student. How much will the total trip cost for the entire sixth grade class? Show or explain how you found your answer.

$$\begin{array}{r} 3.00 \\ + 4.00 \\ \hline 7.50 \\ - 0.50 \\ \hline 9.50 \end{array} \quad \begin{array}{r} 320.50 \\ \times 74 \\ \hline 66500 \\ + 2100 \\ \hline 703.00 \end{array}$$

\$ 703.00

- c. The school has \$500 to pay for part of the total cost of the trip. How much money will each student need to bring to pay for the remaining cost of the trip? Show or explain how you found your answer.

Occasional Computational or Surface Errors

$$\begin{array}{r} 703.00 \\ - 500.00 \\ \hline 103 \end{array} \quad \begin{array}{r} 1.29 \\ 14 \overline{)103} \\ 14 \\ \hline 10 \\ 10 \\ \hline 3 \end{array}$$

\$1.29 each

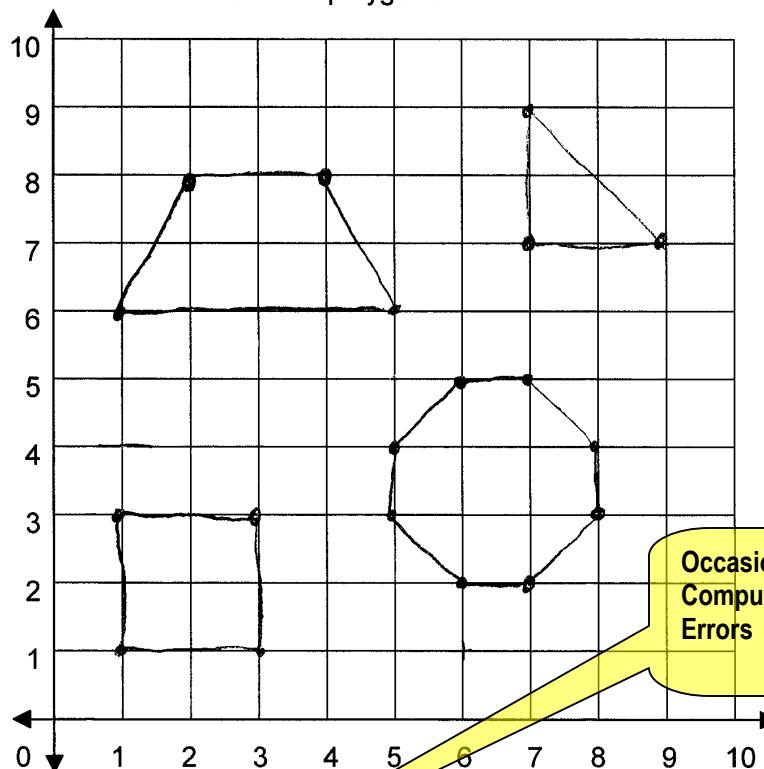
- d. If the class travels 55 miles before stopping for a break, what fraction of the 110 miles will they have traveled? Show or explain how you found your answer.

$$55 \overline{)110} \quad \begin{array}{l} 1 \\ \hline 2 \end{array}$$

Adequate Solutions and Processes

Read problems 2, 3, 4, and 5 on this and the next two pages. Select three problems to answer. Answer ALL of the parts of the three problems you select to answer. Cross out the one problem that you do not choose to answer.

2. Use the coordinate grid to plot the points indicated in parts a, b, and c below. Then connect each group of points in the order listed to make polygons.



Identify the polygons by writing the name of each shape on the lines below.

- a. (1,1), (4,1), (4,3), (1,3)

Square

- b. (5,4), (6,5), (7,5), (8,4), (8,3), (7,2), (6,2), (5,3)

Octagon

- c. (1,6), (2,8), (4,8), (5,6)

Trapezoid

Effective Mathematical Vocabulary

- d. On the grid above, draw a triangle that has a right angle and label the vertex coordinates.

$$(7,7) \quad (9,7) \quad (7,9)$$

- ~~3.~~ Sara went to the store and bought 3 gallons of milk.

- a. Use the conversion chart to find the amounts for each unit below. Show or explain how you found your answer.

1 cup	= 8 ounces
1 pint	= 2 cups
1 quart	= 2 pints
1 gallon	= 4 quarts

$$3 \text{ gallons} = \underline{12} \text{ quarts} = \underline{24} \text{ pints} = \underline{48} \text{ cups} = \underline{384} \text{ ounces}$$

$$\begin{array}{r} + 3 \text{ gallons} \\ \hline 4 & 12 \text{ quarts} \\ \hline 12 & 24 \text{ pints} \\ \hline 2 & 48 \text{ cups} \\ \hline 48 & 384 \text{ ounces} \end{array}$$

- b. If Sara drinks four 8-ounce glasses of milk every day, how many days will the 3 gallons of milk last? Show or explain how you found your answer.



$$\begin{array}{r} 128 \text{ ounces} \\ 3 \overline{) 384} \\ - 3 \\ \hline 8 \\ - 8 \\ \hline 0 \end{array} \quad \begin{array}{r} \times 8 \\ \hline 32 \\ 32 \\ \hline 64 \\ + 32 \\ \hline 96 \\ + 32 \\ \hline 128 \end{array} \quad \begin{array}{r} 4 \\ \hline 128 \end{array} \quad \text{days}$$

- c. Sara drank two 8-ounce glasses on Monday, four 8-ounce glasses on Tuesday, three 8-ounce glasses on Wednesday, five 8-ounce glasses on Thursday, and two 8-ounce glasses on Friday. How many ounces of milk did she drink during these five days? How much is this in gallons? Show or explain how you found your answer.

$$\begin{array}{r} 2 \\ 4 \\ \times 3 \\ \hline 16 \\ 4 \\ \hline 128 \text{ oz} \end{array} \quad \begin{array}{r} 4 \\ \hline 128 \text{ oz} \end{array} \quad \begin{array}{r} 1 \text{ gallon} \end{array}$$

- ~~4.~~ Complete all three tables. Show or explain how you found your answers.

n	n + 6.3
0.4	6.7
1.01	7.31
2.34	8.64
6	12.3

$$\begin{array}{r} + 1.01 \\ \hline 6.3 \\ \hline 7.31 \end{array} \quad \begin{array}{r} + 2.34 \\ \hline 6.3 \\ \hline 8.64 \end{array} \quad \begin{array}{r} + 6 \\ \hline 6.3 \\ \hline 12.3 \end{array}$$

n	n + 3
7	10
11	14
18	21
22	25

$$\begin{array}{r} + 18 \\ \hline 3 \\ \hline 21 \end{array}$$

n	n - 1.5
3	1.5
3.8	2.3
4.2	2.7
7.9	6.4

$$\begin{array}{r} 28.0 \\ - 1.5 \\ \hline 1.5 \\ + 1.5 \\ \hline 3.8 \end{array}$$

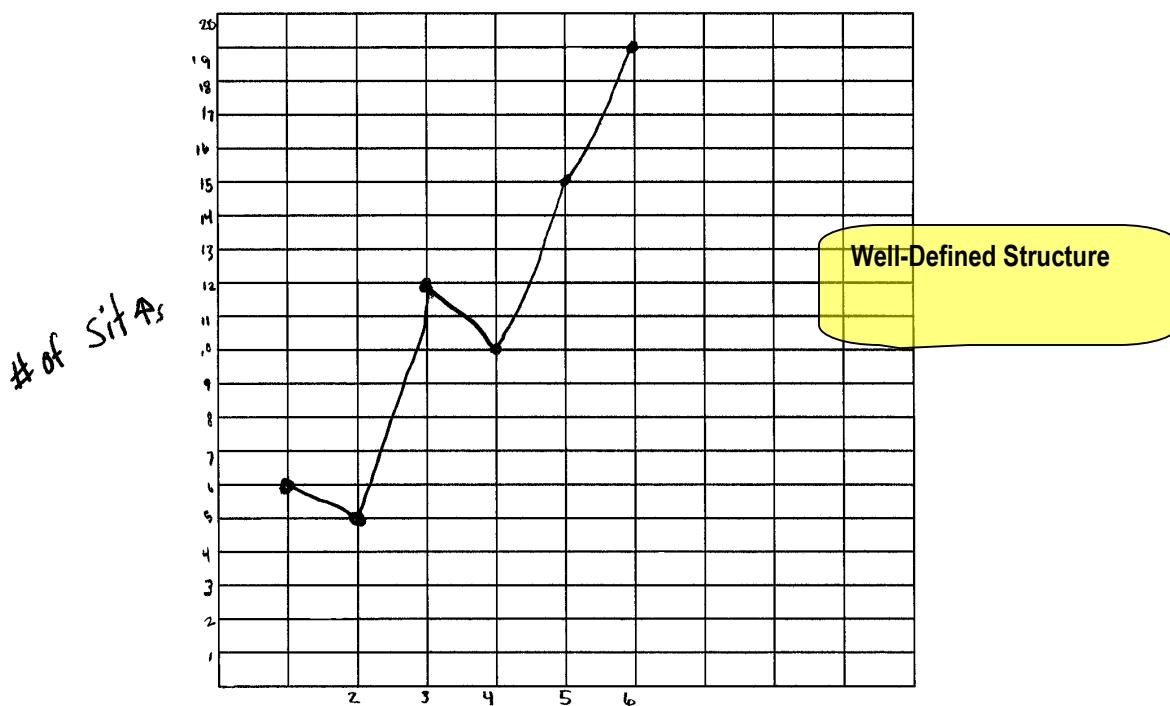
Proficient Application of Basic Skills

$$\begin{array}{r} 34.2 \\ - 1.5 \\ \hline 2.7 \\ + 1.5 \\ \hline 7.9 \end{array}$$

5. Jack is trying to improve the number of sit-ups he can do for the Presidential Physical Fitness test. He kept a record of his highest attempt for each week.

Jack's Weekly Highest Attempt						
Week	1	2	3	4	5	6
Sit-ups	6	5	12	10	15	19

- a. Use the information in the above table to make a graph showing Jack's weekly highest attempt record. Label the graph.



- b. Between which two weeks (one following the other) was there the greatest difference in the number of sit-ups Jack attempted? Show or explain how you found your answer.

$$\frac{6}{1} - \frac{5}{1} = \frac{12}{1} - \frac{5}{1} = \frac{12}{2} - \frac{10}{2} = \frac{15}{5} - \frac{10}{5} = \frac{19}{9}$$

between weeks 2 & 3

- c. What is the range of his recorded weekly attempts? Show or explain how you found your answer.

$$\frac{19}{5} - \frac{5}{1} = \boxed{14}$$